# Avinashilingam Institute for Home Science and Higher Education for Women

**Deemed to be University Estd. u/s 3 of UGC Act 1956, Category 'A' by MHRD (now MoE)**
**Re-accredited with an 'A++' Grade by NAAC CGPA 3.65/4, Category I by UGC**
**Coimbatore - 641 043, Tamil Nadu, India**

**Continuous Internal Assessment – II October 2025**

**Semester V**

**Class : IIIB.Sc** **Time : 2 Hrs**
**Branch : Food Science and Nutrition** **Maximum Marks: 60**

## 23BFNDE4 Food Biotechnology

**Course Outcomes:**

CO1: Expand the knowledge of food biotechnology in relation to genetic engineering and plant tissue culture
CO2: Understanding the role of enzymes and microbes in food industry
CO3: Helps to keep abreast on development and applications of biotechnology in food and nutrition
CO4: Develop newer enzymes for improving the overall nutrition and process ability of a product

**Part A** **6 X 1 = 6**

**Choose the Correct Answer**

1. Which enzyme is needed in the production of high fructose syrup? CO3K1
   a. Amylase b. Glucoamylase c. Glucoseisomerase d. Invertase
2. Choose the secondary metabolite CO3K2
   a. Glucose b. Amino acid c. Fatty acid d. Terpenes
3. Which of the following is the strongest immobilization method for enzymes? CO4K2
   a. Adsorption b. Entrapment c. Microencapsulation
   d. Covalent bonding
4. The bioreactor is required for cyanobacteria is CO4K2
   a. Bubble column b.Ari Lift bioreactor c.Continous stirring
   d. Photobioreactor
5. The microorganism involved in the synthesis of vitamin B12 CO5K3
   a. *Ashbya gossypii* b. *Propionibacterium dentrificians*
   c. *Citrate synthase* d. *Glutamate dehydrogenase*
6. Choose the container for cultivating microorganisms CO5K3
   a. Biochips b. Biosensors c. Bioreactorsd. Incubators

**Part B** **3 x 6 = 18**

**Answer ALL questions**

**Each answer should not exceed 400 words or two pages**

7a. Differentiate between batch and continuous culture. CO3K2

(Or)

7b. Discuss on the working principle of biosensors. CO3K2

8a. Differentiate between soluble and immobilized enzymes CO4K3

(Or)

8b. Brief on working principle of biochips CO4K2

9a. List out enzymes utilized in food industry. CO4K3

(Or)

9b. Explain on synthesis of vitamin B2 CO5K3

**Part C**

**Answer ALL questions**

**Each Answer should not exceed 800 words or four pages**

10a. Discuss on types of bioreactors CO3K2

(Or)

10b. Explain on downstream processing. CO3K3

11a. Discuss in detail biosynthesis of Glutamic acid CO4K2

(Or)

11b. Explain the biosynthesis of Citric acid. CO4K2

12a. Elucidate the methods of immobilization of enzymes CO5K3

(Or)

12b. Discuss on environmental factors influencing bacterial growth CO3K2